IN THE SPECIFICATION

Please replace the paragraph starting on line 18 of page 5 with the following paragraph:

In another version, an electron beam pattern generator generates a pattern of electrons on a workpiece. The pattern generator comprises the aforementioned photocathode, and a laser beam source to generate the laser beam having a wavelength of from about 190 to about 532 nm. A beam modulator is provided to modulate the intensity of the laser beam according to a pattern and direct the modulated laser beam onto the photocathode. Electron beam elements are used to form an electron beam from the emitted electrons and direct the electron beam onto a workpiece. A support is provided to support the workpiece.

Please replace the paragraph starting on line 27 of page 5 with the following paragraph:

Yet another version comprises an electron beam inspection apparatus that is used to inspect a workpiece with electron beams. The apparatus comprises the aforementioned photocathode and a laser beam source to generate a laser beam having a wavelength of from about 190 to about 532[[.]] nm. Electron beam elements are used to form an electron beam from the emitted electrons and direct the electron beam onto a workpiece. A support supports the workpiece. An electron detector is used to detect electrons backscattered from the workpiece to inspect the workpiece.

Please replace the paragraph starting on line 1 of page 15 with the following paragraph:

After deposition of the halide material **60** on the substratum **22**, the deposited material is activated to form an electron-emitting material **24** having a reduced minimum electron emission energy level at its surface. In one activation method, the deposited alkali halide material is irradiated with a radiation such as ultra-violet radiation having a wavelength <300nm, such as deep-ultraviolet radiation having

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a wavelength in the range of from about 190 to about 532 nm. A suitable radiation source for an electron emitter layer comprising CsBr is, for example, an argon-ion laser. The activation is performed by directing the argon-ion laser beam onto the deposited electron-emitting material, in vacuum, for a time period of from <u>about</u> 120 to about 240 minutes. An example of the progress of the activation process is illustrated in Figure 1. The activation can be performed insitu in an electron generating apparatus or the photocathode may be activated in a separate vacuum chamber and transferred to the operating chamber under vacuum. In the irradiation step, a lower minimum electron emission energy level is achieved by the migration of alkali metal atoms to form residual color centers and a surface-capping layer having a higher alkali metal atom concentration.

Please replace the paragraph starting on line 32 of page 15 with the following paragraph:

The electron beam apparatus **100** includes a photon source section **120** coupled to an electron beam section **125**. The photon source section **120** may include a beam source **130**, a beam modulator **135**, optical system **140**, and beam splitter **150**, as illustrated in Figure 4. In one version, the beam source **130** comprises a laser **131**, such as an argon ion laser. The beam source **130** may also comprise a frequency multiplier **132** to increase the frequency of the laser beam **32** emitted by the laser **131**. For example, the frequency multiplier **132** may comprise a beta barium borate (BBO) crystal that approximately doubles the frequency of the laser beam **32**. For an argon-ion produced laser beam having a fundamental wavelength of about 514 nm, a BBO crystal can receive the laser beam and double its frequency; in other words, halve its wavelength to about 257 nm. Alternatively, the beam source **130** may also comprise a frequency doubled diode pumped laser source. In one example, the diode-pumped laser source operates at a fundamental wavelength of about 532 nm. A laser having a wavelength of 364 nm can also be used. <u>The beam source may also comprise a laser having a wavelength of from about 190 to about 532 nm.</u>